

Quercus prinoides* (Fagaceae): a new oak for the Texas flora*Matt White**

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ABSTRACT

On 1 July 2021, a population of dwarf chinkapin oak (*Quercus prinoides*) was discovered in a small drainage on the east slopes above Sanders Creek, below the dam at Pat Mayse Reservoir, in Lamar County, Texas. Many recent publications have excluded the species from Texas. However, early botanical literature has included the species as occurring in Texas. Its occurrence in northeast Texas is not unexpected given the widespread distribution of the species in eastern Oklahoma, particularly neighboring Choctaw County (just across the Red River). Additional populations should be sought along sandy wooded drainages near the Red River in northeast Texas to accurately determine its actual conservation status in the state. *Published online www.phytologia.org Phytologia 104(3): 45-48 (September 20, 2022). ISSN 030319430.*

KEY WORDS: Fagaceae, dwarf chinkapin oak, Texas, Lamar County, *Quercus*.

Quercus prinoides Willd., dwarf chinkapin oak, or sometimes dwarf chestnut oak is a shrublike to small sized tree in the white oak group (subgenus *Leucobalanus*). The scalloped leaf margins bear a superficial resemblance to chinkapin oak (*Q. muehlenbergii* Engelm). Some botanists have considered the two to be conspecific, but this view has not prevailed in recent years and most now treat the two species as distinct (Stein et al. 2003).

The species is listed as present in Texas by Coulter (1891), Small (1903), and Vines (1977) all without reference to specimens or locations. Others such as Stein et al. (2003), Kartesz (2015), and USDA, NRCS (2021) excluded the species from the state.

Twenty-four *Quercus prinoides* plants, ranging from presumably mature trees that were estimated 3-4.5 m tall and 12-15 cm DBH, to very small shrubby trees 1-1.5 m tall and less than 2.5 cm diameter were found at the location below (Figs. 1 and 2). The stature of the trees agrees with Sargent (1895) who reported: "In the prairie regions of Missouri and Kansas [the plants are] almost tree-like in habit." Leaf blades possessed mostly 5-7 secondary veins typical of *Q. prinoides*, which is described as possessing 5-8(-9) secondary veins as opposed to *Q. muehlenbergii* that typically possesses 10 or more secondary veins on each side of leaf blade (Nixon 1997; Fig. 3).



Figure 1. *Quercus prinoides* habitat near Pat Mayse Reservoir in Lamar County, Texas.

Voucher specimen. Texas. Lamar Co.: Near Pat Mayse Reservoir Dam 0.3 mi N of Hwy 906, 1 July 2021, *Singhurst and White 22410* (BAYLU).

Dwarf chinkapin oak, has a wide distribution in eastern North America. The map produced by the Biota of North America (Kartez 2015) shows the species to have two centers of distribution plus a scattering of additional records. One center is west of the Mississippi River, in the Interior Highlands of central and southeastern Oklahoma north through eastern Kansas and (rarely) into extreme eastern Nebraska, western Missouri, southern Iowa and northcentral Arkansas. Outlier populations are in the Panhandle of Oklahoma as well as in central Louisiana. East of the Mississippi River the species is most common in the Northeast and Upper Midwest—from Massachusetts, southern New Hampshire, and Vermont, locally in New York and more widespread in New Jersey and Pennsylvania. It is listed as extirpated in Ohio, scattered south of Pennsylvania and generally uncommon to rare south through Appalachia to Alabama and Mississippi.

Habitats vary throughout its range, but include pine barrens, scrublands, forest margins, prairies, and exposed ridges, on deep sands or dry shale, and is rarely reported on calcareous soils (Nixon 1997). The species occurs on the edge of the Great Plains where it is reported to inhabit “dry exposed soils in woods, on bluffs, and along roadsides and forest margins” (Kaul 1986). Stein et al. (2003) describe the habitat as dry sandstone or shale outcrops.

The Lamar County *Quercus prinoides* site occurs on Woodtell loam soils on 5-12% slopes, which are deep loamy and shaly upland soils (Ressell 1979; Fig. 1 and 2). The habitat is oak and hickory forest with scattered pine.



Figure 2. *Quercus prinoides* foliage near Pat Mayse Reservoir in Lamar County, Texas.



Figure 3. *Quercus prinoides* subsurface leaf blade near Pat Mayse Reservoir in Lamar County, Texas.

Associated trees include *Pinus echinata*, *Quercus velutina*, *Q. stellata*, *Carya alba*, *Fraxinus americana*, *Juniperus virginiana*, *Viburnum rufidulum*, *Vaccinium arboreum*, *Cornus florida*, and *Cercis canadensis*. Shrub and vine layer is composed mostly of *Rhus aromatica*, *Vitis aestivalis*, *Smilax bona-nox*, *S. glauca*, and *Toxicodendron radicans*. Understory herbaceous flora includes *Antennaria parlinii*, *Aristolochia serpentaria*, *Desmodium* spp., *Dichanthelium* spp., *Dioscorea villosa*, *Galium circaezans*, *Monarda russeliana*, *Ruellia caroliniensis*, *Solidago petiolaris*, and *Verbesina helianthoides*. This population was growing in close proximity to small openings populated with prairie vegetation such as *Ceanothus herbacea*, *Eryngium yuccifolium*, *Dalea purpurea*, *Hieracium longipilum*, *Liatris aspera*, *Salvia azurea*, and *Schizachyrium scoparium*.

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